Fig.1

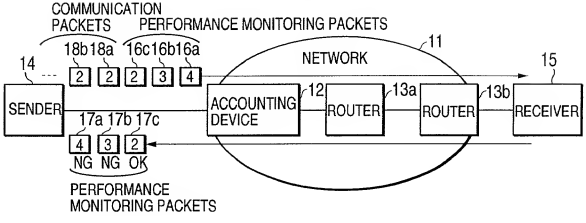
COMMUNICATION PACKETS
PERFORMANCE MONITORING PACKETS
18b 18a 16c 16b 16a
11
NETWORK
14
15
2 2 2 3 4
SENDER
ACCOUNTING DEVICE
12
ROUTER
13a
ROUTER
13b
RECEIVER
17a 17b 17c
4 3 2
NG NG OK
PERFORMANCE MONITORING PACKETS

Fig.2

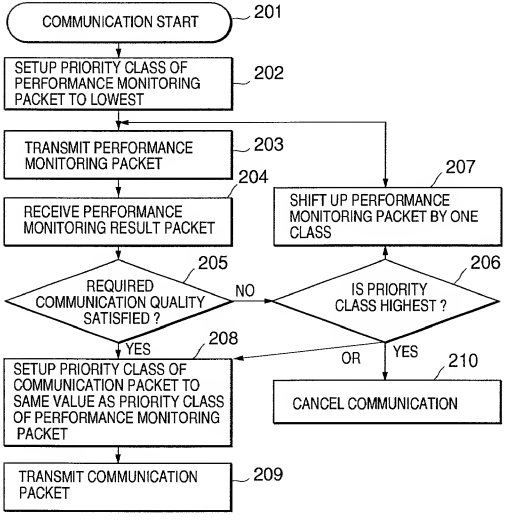
COMMUNICATION START
201
SETUP PRIORITY CLASS OF PERFORMANCE MONITORING PACKET TO LOWEST
202
TRANSMIT PERFORMANCE MONITORING PACKET
203
RECEIVE PERFORMANCE MONITORING RESULT PACKET
204
SHIFT UP PERFORMANCE MONITORING PACKET BY ONE CLASS
207
REQUIRED COMMUNICATION QUALITY SATISFIED ?
205
NO
IS PRIORITY CLASS HIGHEST ?
206
YES
OR
YES
SETUP PRIORITY CLASS OF COMMUNICATION PACKET TO SAME VALUE AS PRIORITY CLASS OF PERFORMANCE MONITORING PACKET
208
CANCEL COMMUNICATION
210
TRANSMIT COMMUNICATION PACKET
209

Fig.3

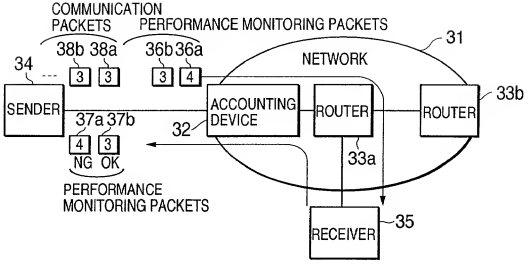

Fig.4

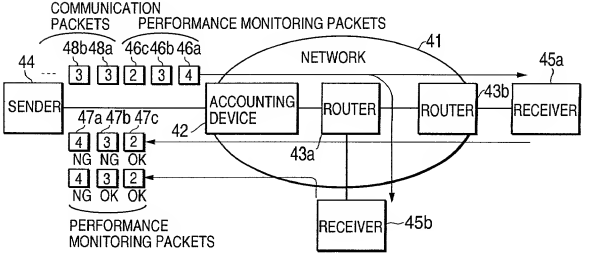

Fig.5

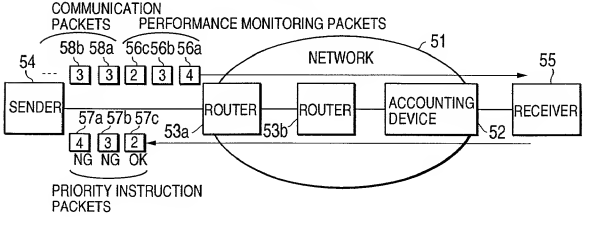

Fig.6

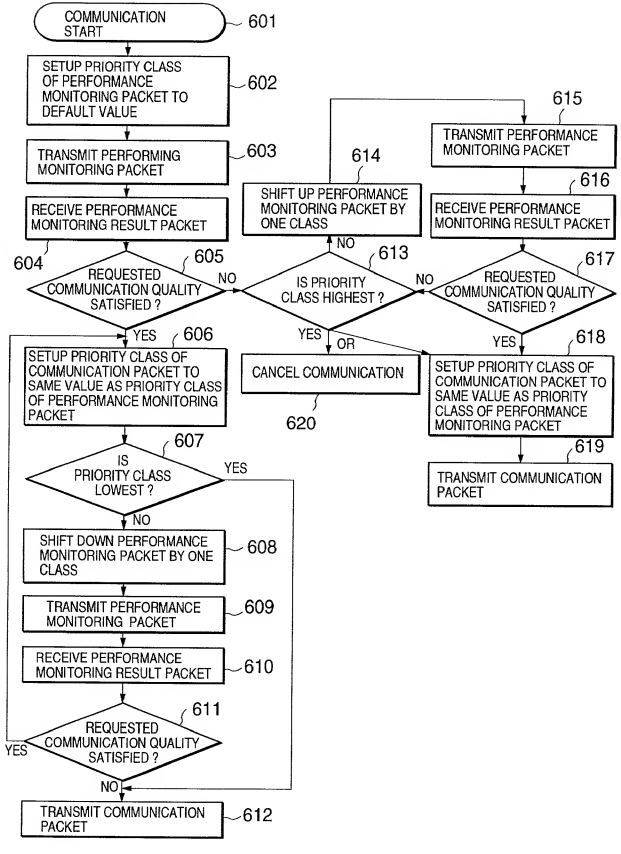
COMMUNICATION START
601
SETUP PRIORITY CLASS OF PERFORMANCE MONITORING PACKET TO DEFAULT VALUE
602
TRANSMIT PERFORMING MONITORING PACKET
603
RECEIVE PERFORMANCE MONITORING RESULT PACKET
604
REQUESTED COMMUNICATION QUALITY SATISFIED ?
605
NO
YES
SETUP PRIORITY CLASS OF COMMUNICATION PACKET TO SAME VALUE AS PRIORITY CLASS OF PERFORMANCE MONITORING PACKET
606
IS PRIORITY CLASS LOWEST ?
607
YES
NO
SHIFT DOWN PERFORMANCE MONITORING PACKET BY ONE CLASS
608
TRANSMIT PERFORMANCE MONITORING PACKET
609
RECEIVE PERFORMANCE MONITORING RESULT PACKET
610
REQUESTED COMMUNICATION QUALITY SATISFIED ?
611
YES
NO
TRANSMIT COMMUNICATION PACKET
612
IS PRIORITY CLASS HIGHEST ?
613
NO
YES
SHIFT UP PERFORMANCE MONITORING PACKET BY ONE CLASS
614
OR
CANCEL COMMUNICATION
620
TRANSMIT PERFORMANCE MONITORING PACKET
615
RECEIVE PERFORMANCE MONITORING RESULT PACKET
616
REQUESTED COMMUNICATION QUALITY SATISFIED ?
617
NO
YES
SETUP PRIORITY CLASS OF COMMUNICATION PACKET TO SAME VALUE AS PRIORITY CLASS OF PERFORMANCE MONITORING PACKET
618
TRANSMIT COMMUNICATION PACKET
619

Fig.7

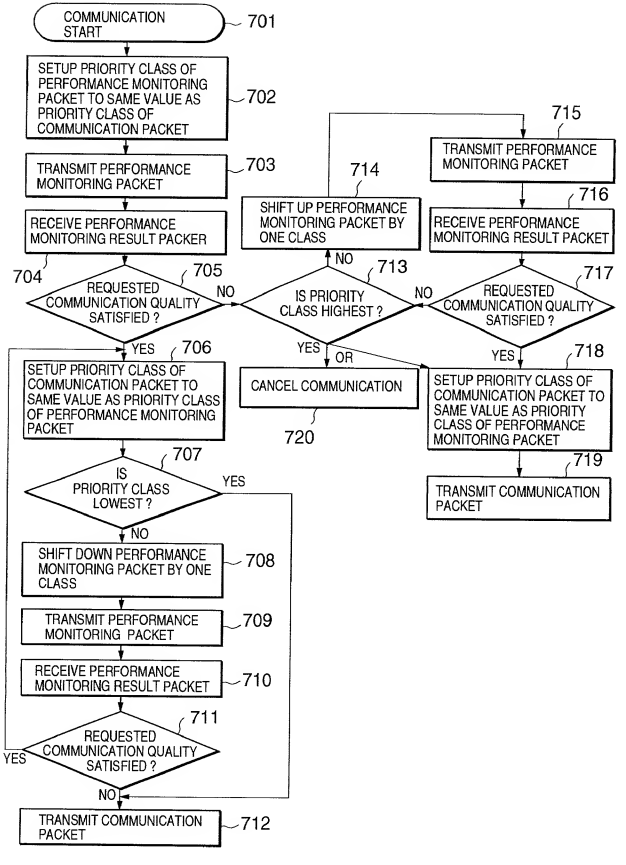
COMMUNICATION START
701
SETUP PRIORITY CLASS OF PERFORMANCE MONITORING PACKET TO SAME VALUE AS PRIORITY CLASS OF COMMUNICATION PACKET
702
TRANSMIT PERFORMANCE MONITORING PACKET
703
RECEIVE PERFORMANCE MONITORING RESULT PACKER
704
REQUESTED COMMUNICATION QUALITY SATISFIED ?
705
NO
YES
SETUP PRIORITY CLASS OF COMMUNICATION PACKET TO SAME VALUE AS PRIORITY CLASS OF PERFORMANCE MONITORING PACKET
706
IS PRIORITY CLASS LOWEST ?
707
YES
NO
SHIFT DOWN PERFORMANCE MONITORING PACKET BY ONE CLASS
708
TRANSMIT PERFORMANCE MONITORING PACKET
709
RECEIVE PERFORMANCE MONITORING RESULT PACKET
710
REQUESTED COMMUNICATION QUALITY SATISFIED ?
711
YES
NO
TRANSMIT COMMUNICATION PACKET
712
IS PRIORITY CLASS HIGHEST ?
713
NO
YES
SHIFT UP PERFORMANCE MONITORING PACKET BY ONE CLASS
714
OR
CANCEL COMMUNICATION
720
TRANSMIT PERFORMANCE MONITORING PACKET
715
RECEIVE PERFORMANCE MONITORING RESULT PACKET
716
REQUESTED COMMUNICATION QUALITY SATISFIED ?
717
NO
YES
SETUP PRIORITY CLASS OF COMMUNICATION PACKET TO SAME VALUE AS PRIORITY CLASS OF PERFORMANCE MONITORING PACKET
718
TRANSMIT COMMUNICATION PACKET
719

Fig.8

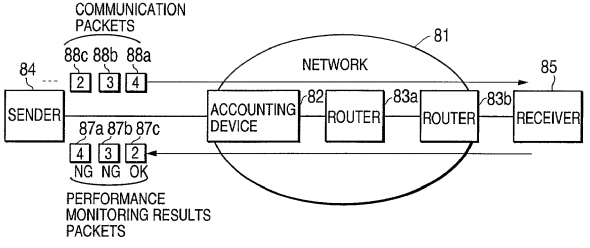
COMMUNICATION PACKETS
88c 88b 88a
84
2 3 4
NETWORK
81
85
SENDER
ACCOUNTING DEVICE
82
ROUTER
83a
ROUTER
83b
RECEIVER
87a 87b 87c
4 3 2
NG NG OK
PERFORMANCE MONITORING RESULTS PACKETS

Fig.9

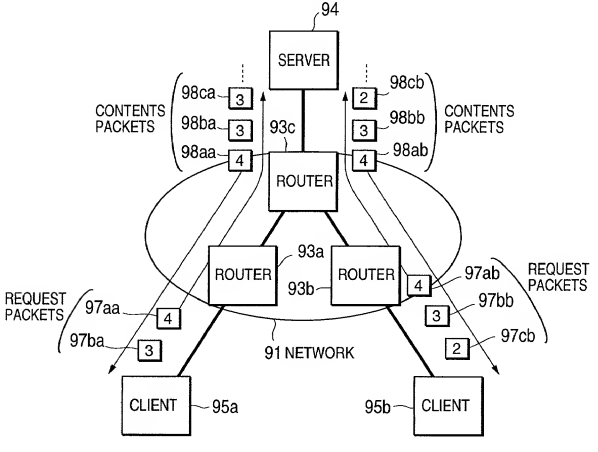
94
SERVER
CONTENTS PACKETS
98ca 3
98ba 3
98aa 4
93c
ROUTER
2 98cb
3 98bb
4 98ab
CONTENTS PACKETS
93a
ROUTER
93b
ROUTER
REQUEST PACKETS
97aa 4
97ba 3
91 NETWORK
4 97ab
3 97bb
2 97cb
REQUEST PACKETS
CLIENT
95a
95b
CLIENT

Fig.10

APPLICATION	DELAY	DELAY VARIATION	THROUGHPUT
TELEPHONE VOICE	100 msec or lower	10 msec or lower	—
BROADCAST IMAGE	200 msec or lower	10 msec or lower	—
FTP DATA	—	—	64 kbps or higher